

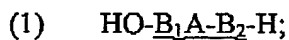
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acknowledgement. Applicants hereby respectfully request that the Examiner clarify the record by acknowledging receipt of the Information Disclosure Statement filed April 15, 2002, and that the Examiner provide an appropriately initialed copy of the PTO-1449 form indicating consideration of the cited prior art.

**CLAIMS 1-4 ARE REJECTED UNDER 35 U.S.C. § 102 FOR LACK OF NOVELTY BASED UPON TAKAHASHI ET AL., JP 10319606 (HEREINAFTER TAKAHASHI)**

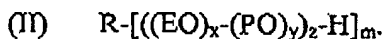
In the second enumerated paragraph, the Examiner asserted that the claimed formula of  $\text{HO}-((\text{EO})_x-(\text{PO})_y)_z\text{-H}$  is disclosed in Takahashi by the formula  $\text{HO}-\text{B}_1\text{A}-\text{B}_2\text{-H}$  and/or  $\text{HO}-\text{A}_1\text{-B}-\text{A}_2\text{-H}$ , where A, A<sub>1</sub> and A<sub>2</sub> are a polypropylene oxide and B, B<sub>1</sub> and B<sub>2</sub> are a polyethylene oxide. This rejection is respectfully traversed.

Applicants respectfully submit that the cleaning agent of the claimed invention is not identically disclosed by the developer disclosed by Takahashi. The developer disclosed in Takahashi contains a compound having the formula (1) or (2):



where A, A<sub>1</sub>, and A<sub>2</sub> represent poly-PO (polypropylene oxide) and B, B<sub>1</sub> and B<sub>2</sub> represent poly-EO (polyethylene oxide).

In contrast, the cleaning agent recited in claim 1 of the claimed invention contains a compound having the general formula (I) and/or (II):



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The compound in the general formula (I) has an alternate sequence of poly-EO and poly-PO, and is different from the compound in formulas (1) and (2) disclosed in Takahashi in the underlined portions. In addition, the compound in the general formula (II) is different from the compound in formulas (1) and (2) disclosed in Takahashi.

Because of these differences, these different compounds have different results when used. For example, Takahashi, serving as a developer, improves defoaming properties and wetability (see paragraph 0024 in the Japanese specification of Takahashi). In contrast, the claimed compound, serving as a cleaning agent, is characterized by dissolubility for tungsten or silicon and suppression of a difference in the etching rate for different types of oxide films (see page 13, lines 24-26; page 14, lines 5-16; page 14, line 28 to page 15, line 4; and page 15, lines 10-23 of Applicants' specification.). Thus, Takahashi fails to identically disclose the claimed invention as recited in claim 1 within the meaning of 35 U.S.C. § 102. Applicants, therefore, respectfully solicit the withdrawal of the imposed rejection of claims 1-4 under 35 U.S.C. § 102 for lack of novelty based upon Takahashi.

**CLAIMS 5-7 ARE REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAHASHI IN VIEW OF NAKAJIMA ET AL., U.S. PATENT NO. 5,713,173 (HEREINAFTER NAKAJIMA)**

In the fourth enumerated paragraph of the Office Action, the Examiner asserted that Takahashi fails to disclose the limitations of mean molecular weight of oxypropylene group in claim 5, the weight ratio in claim 6, and the pH in claim 7, but Nakajima teaches that the concentration of the cleaning solution is variable. Based upon this teaching in Nakajima, the

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Examiner concluded that the limitations of claims 5-7 are result effective variables subject to optimization. This rejection is respectfully traversed.

The requisite motivation to support the ultimate legal conclusion of obviousness under 35 U.S.C. § 103 requires not only a suggestion but a reasonable expectation of success as to a particular benefit.<sup>1</sup> Obvious to try is not the standard.<sup>2</sup> Nakajima merely teaches a method of mechanically controlling the concentration of the treatment agent (cleaning solution), whereas Takahashi is described as relating to a developer for a photoresist. The Examiner, however, has failed to put forth any reasoning or factual basis that would support a finding that one having ordinary skill in the art would consider a teaching that applies to cleaning agents also applicable to developers. A teaching regarding one class of materials is not universally applicable to all classes of materials. Furthermore, even if the Examiner could establish a teaching that a compound in a developer is advantageously varied, such a teaching is not universally applicable to all compounds in a developer. The compound disclosed by Nakajima is not comparable to the compound of Takahashi; and thus, whatever teachings can be found regarding the compound of Nakajima are not applicable to the compound of Takahashi.

Applicants note that the Examiner's assertion that a teaching of variability for a particular limitation is enough to establish that the variable as a "result effective variable" does not accurately reflect the law, In re Boesch<sup>3</sup> in particular, regarding this issue. In this regard, the Examiner is referred to M.P.E.P. § 2144.05 II(B), which is entitled "*Only Result-Effective*

<sup>1</sup> In re Vacck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

<sup>2</sup> In re O'Farrell, 853 F.2d 894, 7 USPQ2d 1673 (Fed. Cir. 1988); In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Dow Chemical Co., 837 F.2d 469, 5 USPQ2d 1529 (Fed. Cir. 1988).

<sup>3</sup> 205 USPQ 215 (CCPA 1980).

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***Variables Can Be Optimized.***" As recognized by the courts, prior to asserting that it would have been obvious to one having ordinary skill in the art to optimize or determine a workable range for a particular claimed parameter, the Examiner must first establish that the parameter to be modified is an (a) art-recognized, (b) result-effective, (c) variable.<sup>4</sup>

Pertaining to (b), the Examiner must establish that the prior art gives one having ordinary skill in the art a reason to optimize this variable (i.e., varying the limitation in one direction or another produces an expected desirable result). In this regard, the Examiner must go beyond establishing that varying the limitation produces some random result. A random result is not enough; instead, the result must be recognized by the prior art as desirable. This issue was addressed in In re Boesch, which was cited by the Examiner.

The claim at issue in In re Boesch was directed to a nickel-based alloy having multiple constituents with various ranges and also required that the constituents satisfy an equation as to  $N_V$ . The primary reference disclosed an alloy having constituents that overlapped the claimed ranges, but the equation as to  $N_V$  was not disclosed. The Court relied upon a secondary reference that suggested that "[t]he higher the  $N_V$  of a given Co-Cr-Ni alloy the higher the change for the precipitation of embrittling phases." The Court then reasoned that the secondary reference taught that  $N_V$  could be varied in a direction that would lead to the claimed range and that varying  $N_V$  in that particular direction produced a desired result. Thus, the Court concluded that  $N_V$  was a known result-effective variable.

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<sup>4</sup> See, In re Rijckaert, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); In re Yates, 663 F.2d 1054, 211 USPQ 1149 (CCPA 1981); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

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The Examiner, however, has not established that varying the "concentration of the cleaning solution" produces a desired result. Furthermore, the Examiner has not establish a baseline range for any of the claimed parameters or that Nakajima teaches a direction to vary the baseline range so as to arrive at the claimed ranges. Thus, the Examiner cannot assert that optimizing the claimed parameters would have been obvious to one having ordinary skill in the art. Applicants, therefore, respectfully solicit the withdrawal of the imposed rejection of claims 5-7 for obviousness based upon Takahashi in view of Nakajima.

**CLAIM 8 IS REJECTED UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON TAKAHASHI IN VIEW OF NAKAJIMA AND YASUO ET AL., JP 06013364 (HEREINAFTER YASUO)**

In the fifth enumerated paragraph of the Office Action, the Examiner asserted that one having ordinary skill in the art would have been motivated to modify the developer of Takahashi in view of Nakajima to add the hydrogen peroxide of Yasuo for the purpose of removing dust on a silicon wafer. The Examiner also asserted that the percentage of hydrogen peroxide is a result-effective variable subject to optimization.

The same issues raised with regard to the rejection of claims 5-7 for obviousness based upon Takahashi in view of Nakajima are raised with regard to this rejection. The Examiner has failed to establish why one having ordinary skill in the art would modify the developer of Takahashi in view of the teachings of Nakajima and Yasuo, which pertain to cleaning agents. Furthermore, the Examiner has failed to establish that the percentage of hydrogen peroxide is an art-recognized, result-effective variable. Thus, one having ordinary skill in the art would not have been motivated to modify these references in the manner suggested by the Examiner.

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Applicants, therefore, respectfully solicit the withdrawal of the imposed rejection of claim 8 for obviousness based upon Takahashi in view of Nakajima and Yasuo.

**CLAIMS 1-7 ARE REJECTED UNDER THE JUDICIALLY CREATED DOCTRINE OF DOUBLE PATENTING IN VIEW OF CLAIMS 1, 3-5 AND 9 OF U.S. PATENT NO. 6,472,357 (HEREINAFTER THE '357 PATENT)**

In the seventh enumerated paragraph of the Office Action, the Examiner asserted that the claimed compound is the same as the electronic parts cleaning solution in claim 1 of US 6,472,357. This rejection is respectfully traversed.

In the Request for Reconsideration filed April 4, 2003, Applicants argued that the Examiner did not perform the required obviousness analysis prior to asserting that the claimed cleaning agent for a semiconductor would have been obvious in view of the electronic parts cleaning solution disclosed by claim 1 of the '357 patent. Applicants also argued that the Examiner is required to perform a two-way obviousness analysis, which includes establishing that the electronic parts cleaning solution disclosed by claim 1 of the '357 patent would have been obvious in view of the cleaning agent for a semiconductor device recited in claim 1. However, this analysis, Applicants argued, was also not performed by the Examiner.

A comparison of the Examiner's prior analysis in the Office Action dated December 5, 2002, with the current Office Action yields the following additional analysis by the Examiner:

Although the conflicting claims are not identical, they are not patentably distinct from each other since the instant claim 1 discloses a cleaning agent, which comprises the same chemicals as those of the electronic parts cleaning solution in claim 1 of US 6,472,357 B2, hence, it would have been obvious to one of ordinary skill in the art that by using the electronic cleaning solution of '357 B2 in the same manner as that of the instant invention would obvious result in a cleaning agent for a semiconductor device containing the formulation as recited in the instant claim 1.

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Notwithstanding this additional "analysis," Applicants respectfully submit that the Examiner has again failed to perform the required obviousness analysis prior to asserting that the claimed cleaning agent for a semiconductor would have been obvious in view of the electronic parts cleaning solution disclosed by claim 1 of the '357 patent. The Examiner's additional remarks are no more than a conclusory statement, without factual support, that claims 1-7 are obvious in view of U.S. Patent No. 6,472,357. The Examiner has also again ignored her responsibility to make a two-way showing of obviousness in order to support the rejection. Therefore, a rejection of claim 1 under the judicially created doctrine of double patenting in view of claims 1, 3-5 and 9 of the '357 patent is not proper, and Applicants respectfully solicit withdrawal thereof. Dependent claims 2-7 are also patentable based upon their dependency upon claim 1.

Applicants have made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. However, Applicants invite the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. Accordingly, and in view of the foregoing remarks, Applicants hereby respectfully request reconsideration and prompt allowance of the pending claims.

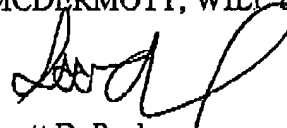
To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417, and please credit any excess fees to such deposit account.

Respectfully submitted,

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